

REMARKS

In the aforementioned amendment, claims 9, 12, 13 and 16 are amended. Now in the application are claims 9-17, of which claims 9, 12, 13 and 16 are independent. No new matter is introduced. The following comments address all stated grounds for rejection and place the presently pending claims, as identified above, in condition for allowance.

Claim Amendments

Applicants amend claims 9, 12, 13 and 16 to clarify the scope of the claimed invention. Applicants change “is not more than an upper limit pressure used in the hydrogen reservoir” to -- falls below a predetermined pressure-- to clarify the language of limitations in claims 9, 12, 13 and 16. Applicants also add to claim 9, 12, 13 and 16 --up to a temperature that is higher than a temperature for normal releasing of the hydrogen,-- to clearly define the heating means or heating step recited in the claimed invention. Support for the claim amendments can be found from the last paragraph at page 11 through the first paragraph at page 12. No new matter is added.

Art Rejections – Claims 9-15

Claims 9-15 are rejected under 35 U.S.C. §103(a) as being unpatentable over Japanese Patent Publication No. 08-094610 of Imoto et al. (the Imoto reference) in view of Japanese

Patent Publication No. 06-193996 of Sato et al. (the Sato reference). Applicants respectfully traverse this rejection.

The claimed invention relates to a hydrogen-occlusion alloy regenerating apparatus or method. The claimed invention detects the deterioration of a hydrogen-occlusion alloy in a hydrogen reservoir. After detecting the deterioration of the hydrogen-occlusion alloy, the claimed invention also detects whether the internal pressure of the hydrogen reservoir falls below a predetermined level. If the internal pressure of the hydrogen reservoir falls below a predetermined level, the hydrogen-occlusion alloy is heated to a temperature that is higher than a temperature for normal releasing of hydrogen so that the hydrogen-occlusion alloy is regenerated.

In particular, the claimed invention reduces the internal pressure of the hydrogen reservoir below a predetermined level before heating the hydrogen-occlusion alloy. If the internal pressure of the hydrogen reservoir is not reduced sufficiently, the internal pressure of the hydrogen reservoir will increase to an undesired level when the hydrogen-occlusion alloy is heated up to a temperature that is higher than a temperature for normal releasing of the hydrogen.

Applicants submit that these limitations of the claimed invention are not taught or suggested by the cited references. The Imoto reference teaches a hydrogen-occlusion alloy regenerating apparatus in which a hydrogen-occlusion alloy is heated by a heater and the inside of a vessel is evacuated by a vacuum pump. The Imoto reference, however, does not teach the remaining-amount detecting means or step recited in claim 9, 12 and 13. The Imoto reference

does not teach that the remaining-amount detecting means send a signal when an internal pressure of the hydrogen reservoir fall below a predetermined pressure before the hydrogen-occlusion alloy is heated.

The Examiner relies on the Sato reference to make up for this deficiency. The Examiner indicates that the pressure detector disclosed in the Sato reference teaches the remaining amount detection means recited in the claimed invention. Applicants respectfully disagree.

The Sato reference relates to a hydrogen purification process that includes an absorption operation; a releasing operation, a purging operation and a recovering operation. The hydrogen is introduced into an MH container (4) in the absorption operation and released from the MH container (4) in the releasing operation. The absorption operation is repeated several times in relation to the releasing operation. A pressure detector (7) detects the pressure of the MH container (4), which is used to turn the absorption operation to the releasing operation.

In the Sato reference, the pressure detector detects the pressure in the MH container to determine whether the hydrogen-occlusion alloy in the MH container is saturated with hydrogen in the absorption operation. *The Sato reference teaches that if the hydrogen-occlusion alloy is saturated, the pressure in the MH container rises to a predetermined limit value, at which the absorption operation shifts to the releasing operation. In contrast, the claimed invention detects whether the internal pressure of the hydrogen reservoir falls below a predetermined pressure.*

Therefore, Applicants believe that the Sato reference also fails to teach or suggest the remaining amount detection means or step of the claimed invention.

Additionally, the Examiner indicates that it would have been obvious for one of ordinary skill in the art to provide the pressure detector described in the Sato reference in the Imoto apparatus. Applicants respectfully disagree. Applicants note that there is no motivation to combine the teachings of the Sato and Imoto references. The Sato reference relates to a hydrogen purification process, which addresses the problems typically associated with the batch flow processes associated with hydrogen purification. In contrast, the Imoto reference relates to a hydrogen-occlusion alloy regenerating system for handling gas concentrations that exceed certain limits. *The hydrogen purification process is completely different from the hydrogen-occlusion alloy regeneration process.* Therefore, Applicants submit that there is no motivation to combine the teachings of the Sato reference with the teachings of the Imoto reference.

Furthermore, Applicants submit that the Imoto reference teaches away from the teachings of the Sato reference. The Imoto reference relates to a device for detecting the ratio of gas, including hydrogen, in a heat utilization system. In the “Description of the Prior Art portion and the Problems to be solved by the Invention” portion of the Imoto reference, it is specifically described that *the Imoto reference is provided to overcome the problems that exist with regenerating systems employing pressure detectors.* The Imoto reference therefore employs a flow meter to overcome the problem of using the pressure detectors. Applicants submit that the Imoto reference excludes the use of pressure detectors, which is taught in the Sato reference.

Hence, the ordinarily skilled artisan would not be motivated to consult the teachings of references such as Sato.

In light of the aforementioned amendment and argument, the cited references fail to teach or suggest all of the limitations of the claimed invention. Applicants therefore submit that claims 1-15 are in condition for allowance.

Art Rejections – Claim 16 and 17

Claim 15 and 16 are rejected under 35 U.S.C. §103(a) as being unpatentable over the Imoto reference in view of the Sato reference, and further in view of U.S. Patent No. 5,976,725 of Gamo et al. (the Gamo reference). Applicants respectfully traverse this rejection.

The claimed invention recites a method of regenerating a hydrogen-occlusion alloy in a fuel cell power generating system. Claim 15 includes similar limitations to claim 9, 12, 13 and 15.

The Gamo reference teaches a connecting structure between a fuel cell and a hydrogen reservoir. The Gamo reference does not teach or suggest a remaining-amount detecting means that sends a signal when the internal pressure of the hydrogen reservoir falls below a predetermined level, as recited in claim 16. In addition, the Gamo reference does not teach or suggest that a hydrogen-occlusion alloy is heated to a temperature that is higher than a temperature for normal releasing of hydrogen based on the signal from the remaining-amount

detecting means, as recited in claim 16. In light of the argument set forth above, the Imoto, Sato and Gamo references fail to teach or suggest all of the claim elements of claim 16. Claim 17, which depends on claim 16, is not rendered obvious over the cited references. Applicants therefore submit that claims 16 and 17 are not obvious over the Imoto, Sato and Gamo references.

CONCLUSION

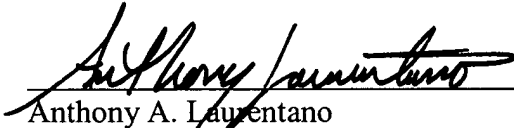
In light of the aforementioned amendment and argument, Applicants contend that each of the Examiners rejections has been adequately addressed and the pending application is in condition for allowance.

Should the Examiner feel that a telephone conference with Applicants' attorney would expedite prosecution of this application, the Examiner is urged to contact the Applicants' attorney at (617) 227-7400.

Respectfully submitted,

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